Differentiated Instruction - Week 1

The following are recommendations for differentiated instruction in regards to patterns, functions and relations.

Patterns

English Language Learners for Patterns:

Beginning Say: This is a geometric pattern. Geometric patterns have geomentric shapes in them.
Have the students repeat.

Intermediate Ask: What geometric shapes make up this pattern? square, circle Say: This is a geometric pattern.

Advanced Write a number pattern. Have students tell the difference between a geometric pattern and a number pattern.

Intervention
Activity Note: Have students write the rule for each of the three patterns in 4 before extending them. Remind students to check the rule of several numbers in the sequence.
Math Writing Prompt: ***Explain your thinking.*** Explain how you know if a pattern is a growing pattern or a shrinking pattern?
Software Support: Soar To Success Math - http://www.hmheducation.com/fl/gomath/digital_classroom_4.php

On Level
Activity Note: A rule can describe the relationship etween consectutive numbers in a pattern or between a number and its position in the pattern. Have students discuss how they use each rule.
Math Writing Prompt: ***Defend a choice.*** Describe the pattern 4, 8, 12, 16,...in two different ways.
Which description would you use to find the seventh term? Why?
MegaMath - www.megamath.com

Challenge
Activity Note: Discuss different ways to describe each pattern, using what students observe about the differences between consecutive terms.
Math Writing Prompt ***Reasoning*** Here are the first numbers in three different patterns. Which pattern has only one possible rule? 2,4,... 2,3,8... 2,4,6,16...
Software Support: Destination Math - http://www.hmhinnovation.com/DM.php

Differentiated Instruction - Week 2

The following are recommendations for differentiated instruction in regards to patterns, functions and coordinating planes.

Functions

English Language Learners for Functions:

+ - x ÷

Have students tell what operation each symbol represents. Write inverse operation. Say: Inverse operations are opposite operations. They undo each other.

Beginning Point and ask: Are addition and subtraction inverse operations? yes Multiplication and division? yes

Intermediate Ask: What is the inverse operation of addition? subtraction Of multiplication? division

Advanced Have students identify the inverse operation.

Intervention

Activity Note: If necessary, help students select inputs for the functions using subtraction and division to avoid negative or fractional outputs.
Math Writing Prompt: ***Explain your thinking.*** Marcy drew a function machine with the rule add8.
The machine showed an input of 6 and an output of 12. Is the drawing correct? Explain why or why not.
Software Support: Soar To Success Math - http://www.hmheducation.com/fl/gomath/digital_classroom_4.php

On Level

Activity Note: Students may try to determine a function rule by looking at only the first one or two input values. Stress the importance of testing the rule on several paris of values to be sure it is correct.
Math Writing Prompt: Why is it helpful to have 3 or 4 inputs in a data table to determine a rule?
Provide an example.
Software Support: MegaMath - www.megamath.com

Challenge

Activity Note: Challenge student pairs to write their own equation in the form y = and make a function table for 5 different values of x.
Math Writing Prompt: ***Patterns*** Explain any patterns you see in the table.

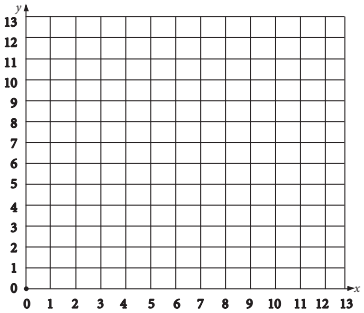
input	2	4	6	8
output	5	9	13	17

Software Support: Destination Math - http://www.hmhinnovation.com/DM.php

Differentiated Instruction - Week 3

The following are recommendations for differentiated instruction in regards to patterns, functions and coordinating planes.

Coordinating Planes:



English Language Learners for Functions:

Show students an example of a coordinate plane. Write *coordinate plane.* Say: A coordinate plane can be used to plot locations, such as a map.

Beginning Say: This is quadrant 1 of the coordinate plane. have students repeat.

Intermediate Ask: Is this a graph? no Say: This is quadrant 1 of the _____. coordinate plane

Advanced Have students tell the difference between a grpah and the coordinate plane.

Intervention
Activity Note: If students are having difficulty remembering how to plot the points, use the reminder up, across.
Math Writing Prompt: ***Plotting Points*** On a coordinate grid, plot any 3 points. Identify the coordinates for each point. Explain how you determined the coordinates.
Software Support: Soar To Success Math - http://www.hmheducation.com/fl/gomath/digital_classroom_4.php

On Level
Activity Note: Review the properties of trapezoids and triangles and the definition of the term isosceles before students begin this activity.
Math Writing Prompt: ***Reasoning*** Does each point on the coordinate plane have exactly one set of coordinates? Explain your answer.
Software Support: MegaMath - www.megamath.com

Challenge
Activity Note: Stress the importance of drawing the lines in order. For students who finish early, have them draw another irregular polygon and list the coordinates of the vertices.
Math Writing Prompt: ***Create your own.*** Draw a rectangle on the coorginate plane with an area of 24 square units and a perimeter of 22 units.
Software Support: Destination Math - http://www.hmhinnovation.com/DM.php

Differentiated Instruction - Week 4

The following are recommendations for differentiated instruction in regards to patterns, functions and coordinating planes.

Review and Extensions

Week 1: Patterns

Week 2: Functions

Weeks 3: Coordinate Planes